Part 101
Moored Balloons, Kites, Unmanned Rockets, and Unmanned Free Balloons

This edition replaces the existing loose-leaf Part 101 and its changes.

This FAA publication of the basic FAR Part 101, effective September 30, 1963, incorporates Amendments 101-1 through 101-5 with preambles.

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Bold brackets **[[]]** throughout the regulation indicate the most recent changed or added material for that particular subpart. The amendment number and effective date of new material appear in bold brackets at the end of each affected section.

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Subpart B—Moored Balloons and Kites

Subpart C—Unmanned Rockets

Subpart D—Unmanned Free Balloons

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its regulatory material into a new series of regulations called the "Federal Aviation Regulations" to replace the present "Civil Air Regulations" and "Regulations of the Administrator".

During the life of the recodification project, Chapter I of Title 14 may contain more than one Part bearing the same number. To differentiate between the two, the recodified Parts, such as the ones in this subchapter, will be labeled "[New]". The label will of course be dropped at the completion of the project as all of the regulations will be new.

This action was published as a notice of proposed rule making in the Federal Register on February 1, 1963 (28 F.R. 1003), and as Draft Release 63–3.

Some of the comments received recommended specific substantive changes to the regulations. Although some of the recommendations might, upon further study, appear to be meritorious, they cannot be adopted as a part of the recodification program. The purpose of the program is simply to streamline and clarify present regulatory language and to delete obsolete or redundant provisions. To attempt substantive changes in the recodification of these regulations (other than minor, relaxatory ones that are completely non-controversial) would delay the project and would be contrary to the ground rules specified for it in the Federal Register on November 15, 1961 (26 F.R. 10698) and Draft Release 61–25. However, all comments of this nature will be preserved and considered in any later substantive revision of the affected Parts.

As a result of other comments received, several changes have been made in Subchapter F.

Sections 91.33 and 91.35 have been added to include the instrument and equipment requirements for general aviation aircraft that were contained in Part 43. Section 91.33 incorporates the instrument and equipment requirements for standard category aircraft from former § 43.30 and the DME provision from former § 43.33. Section 91.35 incorporates the flight recorder requirements from former § 43.32. These changes have been made in recognition of the greater user convenience that results from combining these rules with the general operation provisions of Part 91 [New].

A new § 91.37 has been included in Part 91 [New] to cover weight limitations for transport category aircraft. This section is based upon former §§ 43.11, and 43T.11 of SR 422A and SR 422B. These provisions were omitted from DR 63–3 as surplus, but comments correctly pointed out the need for their inclusion in Part 91 [New].

Section 91.59 As proposed in DR 63–3 required compliance with the applicable marine rules of the road when operating an aircraft on water but it did not specifically spell out those rules, in order to avoid any misunderstanding as to the rules that must be complied with, that section has been revised to state those rules in detail and it now appears as § 91.69.

A number of chances have been made in proposed § 91.75. As proposed in DR 63–3, that section contained the air traffic rules for operating on or in the vicinity of airports, including specific provisions for controlled and uncontrolled airports, Because of the undue length of the section it has been broken down into three separate sections which now appear as §§ 91.85, 91.87, and 91.89. Paragraph (a) of proposed § 91.75 defined, for the purpose of that section, the terms "airport traffic area," "controlled airport," and "uncontrolled airport". The latter two terms were distinguished on the basis of whether or not the airport had a control tower. One comment received pointed out that under the present rules even an airport without a control tower becomes a "controlled airport" if it is located in a control zone and the weather in that zone goes below basic VFR minimums. Therefore, §§ 91.87 and 91.89 have been revised to eliminate those terms and to execute their definitions. In addition, because of its general applicability, the definition of "airport traffic area" has been transferred to Part 1 [New].

Two other changes have been made in proposed § 91.75. First, the word "arriving" has been inserted in the first sentence of paragraph (c) of § 91.85 so that it correctly reflects the scope of the rule on which it is based. Secondly, paragraph (d) of § 91.87 has been revised to apply only to aircraft "operating to" an airport. As this provision appeared in the draft release it would apply to aircraft operating "to,

that became effective after the draft release was published. Each of these amendments, when published, contained a statement that they would be included in the final draft of the recodified Parts affected and, in addition, Draft Release 63–3 stated that such amendments would be included in the final draft of the revised subchapter. Amendments 43–16, 43–17, 48–1, 60–31, 60–32, and 619–1 are therefore reflected in the new subchapter.

Other minor changes of a technical clarifying nature or relaxatory nature have been made. They are not substantive and do not impose any burden on regulated persons.

Of the comments received on Draft Release 63–3, several suggested changes in style, format, or technical wording. These comments have been carefully considered and, where consistent with the style, format, and terminology of the recodification project, were adopted.

Comments received regarding proposed § 91.77 indicated a misunderstanding of the provisions of that section. Under § 60.24, on which proposed § 91.77 was based, there were two types of flight test areas, ''approved'' areas and ''designated'' areas. Since the Administrator has never ''designated'' flight test areas, § 60.24(a)(2) has been dropped as obsolete. The remaining flight test area provisions are now included in § 91.93.

A number of comments received regarding proposed § 91.35 indicated that many persons were not aware that under Part 190 of the Civil Air Regulations a person operating a foreign civil aircraft in the United States under VFR rules had to file a VFR flight plan. As proposed, § 91.35 simply restated that provision and it has been retained without change in § 91.43.

It should be noted that CAMs and information notes that are still current but which have been deleted as part of this amendment, will be republished in the Agency's Advisory Circular System.

The recodification of the air traffic and general operating rules in Subchapter F does not change the applicability of those rules, nor does it affect those rules governing special operations that prevail over the general rules contained in that subchapter. In addition, a certificate of waiver or an exemption that involves a regulation recodified herein that is outstanding on the effective date of this amendment will continue to be effective according to its terms and conditions even though it refers to Part or section numbers no longer in existence. For example, an exemption from the VFR cruising altitude provisions of former § 60.32 would continue under the terms and conditions of that exemption, to allow deviation from those altitudes, even though § 60.32 has been superseded by § 91.109. At such time as a certificate of waiver or an exemption is renewed, section references will be revised to reflect the new section number. In view of this, it is not necessary for persons who hold certificates of waiver or exemptions to take any action due to the recodification and renumbering of the air traffic and general operating rules.

The definitions, abbreviations, and rules of construction contained in Part 1 [New] of the Federal Aviation Regulations apply to Subchapter F. When Part 1 [New] was adopted its preamble stated that it would be amended as necessary in order to apply to specific regulations as they were recodified. As part of this action Part 1 [New] is being amended to incorporate definitions found to be necessary because of the adoption of subsequently issued FARs, including Subchapter F. The definitions of ''air traffic clearance,'' ''air traffic control,'' and ''airport traffic area'' have been incorporated from Part 60. The definitions of ''kite'' and ''rocket'' have been incorporated from Part 48. The definitions of ''air commerce,'' ''foreign air commerce,'' ''interstate air commerce,'' and ''overseas air commerce'' have been incorporated from § 101 of the Federal Aviation Act of 1958. In addition to these definitions, Part 1 [New] is being amended to include definitions of ''category,'' ''class,'' and ''type'' and to delete the definition of ''pilot''.

Interested persons have been afforded an opportunity to participate in the making of this regulation, and due consideration has been given to all relevant matter presented. The Agency appreciates the cooperative spirit in which the public's comments were submitted.

Adopted: December 26, 1963 **Effective: April 3, 1964**

(Published in 29 F.R. 45, January 3, 1964)

On November 1, 1962, notice was given in Draft Release 62–45 (27 F.R. 10656) that the Federal Aviation Agency had under consideration a proposal to amend Part 48 of the Civil Air Regulations to include regulations governing the operation of unmanned free balloons. The notice also proposed to amend the scope of Part 60 to exclude unmanned free balloons from the air traffic rules contained therein.

Regulatory action, as proposed, is required to provide the necessary compatibility between unmanned free balloon operations and other airspace activities. It is also necessary to provide for the protection of persons and property on the ground that are not associated with the operation of unmanned free balloons.

Eleven comments were received in response to the draft release. The National Aeronautics and Space Administration, the Air Line Pilots Association, the National Aviation Trades Association, the University of Minnesota, the Aircraft Owners and Pilots Association, and the National Center for Atmospheric Research endorsed the proposal as presented. The remainder of the comments generally supported the proposal but recommended certain changes. For continuity these recommendations will be considered in the sequence of the proposed rule.

The Department of the Army recommended that the term ''size/weight ratio'' be amplified to state more clearly how this ratio is computed. Therefore, that portion of the rule is modified; first, by reversing the term to read ''weight/size'' to more clearly show that it is the total weight of the payload package applied to the area of the smallest surface of such package; second, by adding a statement as to how the exact weight/size ratio can be determined.

One comment stated that the proposed regulation did not allow an operation to be conducted through a thin transparent cirrus cloud condition even though all other operating limitations were satisfied. Accordingly, it was recommended that there be provision for operations when such a cloud condition exists. The weather requirements adopted herein are necessary precautions to ensure that the balloon is operated in a manner that makes it easily seen and avoided by airplanes. Furthermore, since it is incumbent on the pilot of an airplane to see and avoid an unmanned free balloon by giving it right-of-way, a modification in the manner suggested would nullify a major safety objective to make balloon operations compatible with those of other airspace users. Therefore, no change is made in the operating limitations regarding cloud coverage and horizontal visibility.

One comment indicated a possible misconception regarding the lighting requirement during night operations. This requirement for lighting applies to the entire balloon assembly and not just to the balloon envelope. To eliminate any doubt, that portion of the rule is modified to clearly state that the requirement to light the balloon also applies to the entire balloon assembly, whether operated as one unit or separated during the operation.

The National Pilots Association recommended that all trailing antennas be marked with colored pennants or streamers since contact with the antenna by a small aircraft could produce an adverse effect if the antenna became entangled in the propeller. A light weight antenna that would be broken by a force of less than 50 pounds, which the proposal hAd exempted from such marking, is not suited for such attachments. A pennant or streamer attached to a light weight antenna has the tendency to float back up into the antenna and become entangled with it. This condition could nullify the purpose of the antenna, which is to supply altitude and D/F information to the balloon operator who, in turn, forwards the position and altitude to air traffic control. On this basis, no change is being made to that section of the rule.

suspension system of one or more open parachutes is already well marked and may be easily recognized since they normally employ high conspicuity colors such as aviation surface orange and white. We have, however, modified the rule to require that suspension systems, other than highly conspicuously colored open parachutes, exceeding 50 feet in length must be marked with colored pennants or streamers or alternate bands of high conspicuity colors. As discussed previously, in many cases it would be technically difficult to incorporate markings that would make a balloon subsystem easily recognizable much beyond one mile. Therefore, in addition to providing notice to airmen information about programmed balloon flights, the Agency will pursue an educational program by a continual reminder in the *Airman's Guide* and other aeronautical publications that flight below an unmanned free balloon should be avoided. In this reminder, all pilots will be advised that these balloons may have suspension devices and trailing antennas suspended beneath them that might be invisible until the aircraft is close to the balloon. This same type of notice has proven successful in the past by reminding all pilots operating in coastal waters about airships that might have invisible cables suspended beneath them.

The U.S. Air Force and the Air Transport Association recommended that unmanned free balloons, while within positive control areas, be equipped with a functioning radar beacon transponder that would permit radar observation of the balloon by air traffic control. When Draft Release 62–5 was published, airborne radar beacon equipment was not considered readily adaptable to unmanned free balloons due to its weight and cost. In the meantime, a number of unmanned free balloons have been operated successfully utilizing beacon transponder equipment. These operations indicate that radar beacon equipment is adaptable for use on many unmanned free balloons. This equipment will undoubtedly be even more suitable when it is designed primarily for balloons with the view towards reduced weight, lower costs, and increased availability. In recognition of these matters, the Agency will issue a notice of proposed rule making to require a functioning radar beacon transponder on certain unmanned free balloons. Additionally, the use of such equipment may lend credence to a modification of certain of the weather requirements discussed earlier. During the development stages of the new notice, following the adoption of the rule contained herein, coordination with manufacturers of radar beacon equipment, balloon operators and other segments of the public will be conducted to obtain all possible opinions, recommendations, and reactions.

In view of the upward expansion of the positive control areas, all reference in the balloon position and notice requirements has been changed from 44,000 feet to 60,000 feet.

In consideration of the foregoing, Subchapter F of Chapter I of Title 14 of the Code of Federal Regulations is amended as follows.

This amendment is made under the authority of section 307 and 313(a) of the Federal Aviation Act of 1958 (49 U.S.C. 1348 and 1354).

This amendment becomes effective on April 3, 1964.

Amendment 101–2

Unmanned Free Balloon Equipment Requirements

Adopted: March 22, 1967 **Effective: April 28, 1967**

(Published in 32 F.R. 5254, March 29, 1967)

The purpose of this amendment is to alter the equipment requirements for the operation of unmanned free balloons.

The Agency published a Notice of Proposed Rule Making in the Federal Register on December 8, 1966, (31 F.R. 15490) circulated as Notice No. 66–43 which proposed dual and independent systems for releasing the payload and for terminating the flight of the balloon envelope, and a radar reflective

to be necessary.

The nature of most scientific experiments that utilize high-altitude balloons would preclude the use of designated colors on the balloon envelope because problems involving heat absorption, light reflection, and other phenomena would be created, thereby interfering with the experiments being conducted.

With regard to the suggested minimum balloon size requirement, the size of the balloon is dependent, to a large extent upon the nature of the experiment being conducted, and the altitude to which the payload must be carried. Limiting the size of unmanned balloons may unnecessarily restrict experiments utilizing balloons.

ALPA also recommended that the Agency specify minimum standards for the balloon payload cut-down, destruct, and radar reflective devices. To the extent practicable, this was done in the proposal. However, balloon operators and manufacturers have the necessary expertise for developing specific systems and devices so that the selection of the particular types of payload release systems, destruct methods, and radar reflective devices to meet the performance standards prescribed in this rule has been left to the determination of the manufacturers or operators.

Professor R. Brown recommended that the proposal be amended to require balloon payloads to be equipped with a radar reflecting device so that the payload could be tracked during its descent. Some benefit might be derived from that requirement and the matter may be considered for adoption in a subsequent proposal. However, as stated in Notice 66–43, there have been several instances recently where the flight of unmanned free balloons could not be terminated as planned, and these balloons became derelicts and drifted over large sections of the country presenting possible hazards to air navigation. Because of this, it is necessary that § 101.35(a) should be revised immediately to include the additional equipment requirements proposed in Notice No. 66–43.

The word "completely" relating to independent destruct and payload cut-down systems was included in subparagraphs (1) and (2) of the notice to emphasize the requirement that each system, device, or combination, in addition to having a separate operation, should have separate power sources, activators or similar components to function in the event of a total failure of the corresponding unit. It has, however, been omitted from the rule as being surplusage.

In consideration of the foregoing, § 191.35(a) of the Federal Aviation Regulations is amended, effective April 28, 1967.

This amendment is made under the authority of sections 307 and 313(a) of the Federal Aviation Act of 1958 (49 U.S.C. 1348 and 1354).

Amendment 101–3

Hazardous Operations

Adopted: May 19, 1970 **Effective: May 26, 1970**

(Published in 35 F.R. 8212, May 26, 1970)

The purpose of these amendments to Part 101 of the Federal Aviation Regulations is to prescribe additional regulations governing moored balloon and kite operations currently excepted from the application of Part 101 by virtue of size, capacity, or weight.

At the present time, Part 101 is applicable only to (1) moored balloons that exceed six feet in diameter or contain a gas capacity in excess of 115 cubic feet; (2) kites that weight more than 5 pounds and which are intended to be flown at the end of a rope or cable: (3) all unmanned rockets except aerial fireworks displays and certain small rockets; and (4) certain unmanned free balloons.

As recently as December, 1969, it was reported to the FAA that 70 jet aircraft were forced to detour from the path of a high flying kite at San Francisco International Airport. Because of this, it became necessary to request a change in the airport traffic pattern so that the kite would not be ingested into a jet engine.

Of even greater moment is the effect certain moored balloons, currently excepted from the provisions of Part 101, are having upon the safety of aircraft in flight.

At Inglewood, California, a balloon operation was conducted for the purpose of interfering with air navigation to protest noise caused by "low-flying aircraft" utilizing the Los Angeles International Airport. After being prevented from using a balloon of 6 feet, or greater in diameter, the operator resorted to the use of a smaller balloon to avoid the applicability of Part 101. The FAA has been advised that legally it is extremely difficult to prevent balloon operations such as this, even though they present an immediate danger to aircraft in flight, unless appropriate amendments are made to Part 101.

Even though a moored balloon is less than 6 feet in diameter or has a gas capacity less than 115 cubic feet, the derogation to safety may be as great as if the moored balloon falls within the present regulation.

Although moored balloons may be operated free from regulatory constraint if less than 6 feet in diameter or 115 cubic feet gas capacity, the limited size of these objects makes it all the more difficult for a pilot to either detect the balloon and avoid striking it, or to see it in sufficient time to avoid the necessity of taking radical evasive action. In the latter case, injuries could result to passengers and crew, as well as placing excessive stresses upon the aircraft structure. Possible loss of control of the aircraft by the pilot is also a potential hazard. The latter possibility involves a major safety problem, since an incident of this type will occur during the approach or take-off phase of flight when the aircraft is being operated much closer to stalling speeds and relatively close to the ground.

By reason of the foregoing, a situation exists that demands immediate regulatory action involving moored balloons and kites. Because this regulatory action is needed immediately to correct an unsafe condition, it has been determined that in the public interest, notice and public procedure hereon are impracticable and for this reason good cause exists for making this amendment effective in less than 30 days.

In consideration of the foregoing, Part 101 of the Federal Aviation Regulations is amended, effective Nay 26, 1970.

(Sections 307(a) and 313(a) of the Federal Aviation Act of 1958; 40 U.S.C. 1348, 1354(a). Section 6(c) of the Department of Transportation Act; 49 U.S.C. 1655(c)).

Amendment 101–4

Objects Dropped from Certain Balloons, Kites, and Rockets

Adopted: June 13, 1974 **Effective: August 20, 1974**

(Published in 39 F.R. 22252, June 21, 1974)

The purpose of these amendments to Part 101 of the Federal Aviation Regulations is to add a provision governing the dropping of objects under that Part and to make other minor amendments.

Notice 73–15 was published in the Federal Register on May 7, 1973 (38 F.R. 11354), stating that the Federal Aviation Administration was considering an amendment to Part 101 of the Federal Aviation Regulations to include a provision governing the dropping of objects from moored balloons, kites, unmanned

deleted since it was vague and unclear and tended to lessen the effect of the flrst sentence. The second sentence, as proposed, stated that "this section does not prohibit the dropping of any object if reasonable precautions are taken to avoid injury or damage to persons or property." The commentator stated that this language had the effect of diminishing the clear intent of the first sentence which stated that no person may allow 'an object to be dropped . . . if such action creates a hazard to persons or property." The FAA agrees with this comment. This amendment omits the second sentence.

One commentator suggested that § 101.7 as written might preclude military air drops because of possible hazard to military property. The intent of this proposal was not to prevent a hazard to the property of the regulated person himself but rather to protect the property of other persons. Paragraph (b) of § 101.7, as added by this amendment, therefore, is reworded to specifically refer to hazards to "other persons, or to their property." This would further clarify the intent of the amendment to allow an operator to accept personal risk while limiting the right so as to prevent possible risk to others. At the same time paragraph (a) of § 101.7 is amended to be consistent with this amendment. This revision includes deletion of the reference to "aircraft," since aircraft are covered by the word "property."

[Sections 307 and 313(a) of the Federal Aviation Act of 1958, 49 U.S.C. 1348, 1354(a); Section 6(c) of the Department of Transportation Act, 49 U.S.C. 1655(c).]

In consideration of the foregoing, Part 101 of the Federal Aviation Regulations is amended as follows, effective August 20, 1974

ommendations of the National Airspace Review (NAR) concerning changes to regulations and procedures in regard to airspace classifications. These changes are intended to: (1) simplify airspace designations; (2) achieve international commonality of airspace designations; (3) increase standardization of equipment requirements for operations in various classifications of airspace; (4) describe appropriate pilot certificate requirements, visual flight rules (VFR) visibility and distance from cloud rules, and air traffic services offered in each class of airspace; and (5) satisfy the responsibilities of the United States as a member of the International Civil Aviation Organization (ICAO). The final rule also amends the requirement for minimum distance from clouds in certain airspace areas and the requirements for communications with air traffic control (ATC) in certain airspace areas; eliminates airport radar service areas (ARSAs), control zones, and terminal control areas (TCAs) as airspace classifications; and eliminates the term "airport traffic area." The FAA believes simplified airspace classifications will reduce existing airspace complexity and thereby enhance safety.

EFFECTIVE DATES: These regulations become effective September 16, 1993, except that §§ 11.61(c), 91.215(b) introductory text, 91.215(d), 71.601, 71.603, 71.605, 71.607, and 71.609 and Part 75 become effective December 12, 1991, and except that amendatory instruction number 20, § 71.1, is effective as of December 17, 1991 through September 15, 1993, and that §§ 71.11 and 71.19 become effective October 15, 1992. The incorporation by reference of FAA Order 7400.7 in § 71.1 (amendatory instruction number 20) is approved by the Director of the Federal Register as of December 17, 1991 through September 15, 1993. The incorporation by reference of FAA Order 7400.9 in § 71.1 (amendatory instruction number 24) is approved by the Director of the Federal Register as of September 16, 1993 through September 15, 1994.

FOR FURTHER INFORMATION CONTACT: Mr. William M. Mosley, Air Traffic Rules Branch, ATP–230, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, telephone (202) 267-9251.

SUPPLEMENTARY INFORMATION:

Background

On April 22, 1982, the NAR plan was published in the *Federal Register* (47 FR 17448). The plan encompassed a review of airspace use and the procedural aspects of the ATC system. Organizations participating with the FAA in the NAR included: Aircraft Owners and Pilots Association (AOPA), Air Line Pilots Association (ALPA), Air Transport Association (ATA), Department of Defense (DOD), Experimental Aircraft Association (EAA), Helicopter Association International (HAI), National Association of State Aviation Officials (NASAO), National Business Aircraft Association (NBAA), and Regional Airline Association (RAA).

The main objectives of the NAR were to:

(1) Develop and incorporate a more efficient relationship between traffic flows, airspace allocation, and system capacity in the ATC system. This relationship will involve the use of improved air traffic flow management to maximize system capacity and to improve airspace management.

(2) Review and eliminate, wherever practicable, governmental restraints to system efficiency thereby reducing complexity and simplifying the ATC system.

(3) Revalidate ATC services within the National Airspace System (NAS) with respect to state-of-the-art and future technological improvements.

In furtherance of the foregoing objectives, several NAR task groups were organized and assigned to review various issues associated with airspace classifications and ATC procedures, pilot certification

flight rules (IFR) and are subject to ATC clearances and instructions. ATC separation is provided to all aircraft.

Class B Airspace (U.S. Terminal Control Areas). Operations may be conducted under IFR, special visual flight rules (SVFR), or VFR. However, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to all aircraft.

Class C Airspace (U.S. Airport Radar Service Areas). Operations may be conducted under IFR, SVFR, or VFR; however, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to all aircraft operating under IFR or SVFR and, as necessary, to any aircraft operating under VFR when any aircraft operating under IFR is involved. All VFR operations will be provided with safety alerts and, upon request, conflict resolution instructions.

Class D Airspace (U.S. Control Zones for Airports with Operating Control Towers and Airport Traffic Areas that are not associated with a TCA or an ARSA). Operations may be conducted under IFR, SVFR, or VFR; however, all aircraft are subject to ATC clearances and instructions. ATC separation is provided to aircraft operating under IFR or SVFR only. All traffic will receive safety alerts and, on pilot request, conflict resolution instructions.

Class E Airspace (U.S. General Controlled Airspace). Operations may be conducted under IFR, SVFR, or VFR. ATC separation is provided only to aircraft operating under IFR and SVFR within a surface area. As far as practical, ATC may provide safety alerts to aircraft operating under VFR.

Class F Airspace (U.S. Has No Equivalent). Operations may be conducted under IFR or VFR. ATC separation will be provided, so far as practical, to aircraft operating under IFR.

Class G Airspace (U.S. Uncontrolled Airspace). Operations may be conducted under IFR or VFR. ATC separation is not provided.

Discussion of the Amendments and Public Comments

This final rule is based on Notice of Proposed Rulemaking (NPRM) No. 89–28 (54 FR 42916; October 18, 1989). The rule amends Parts 1, 11, 45, 61, 65, 71, 75, 91, 93, 101, 103, 105, 121, 127, 135, 137, 139, and 171 and Special Federal Aviation Regulations (SFAR) 51-1, 60, and 62. These parts either incorporate airspace designations and operating rules or amend the existing rule to meet the new classification language.

Amendments to Part 1 delete the definition of an ''airport traffic area'' and add definitions of ''Special VFR conditions'' and ''Special VFR operations.''

The amendments to Part 71 establish a new Subpart M—Jet Routes and Area High Routes that includes the existing rules in Part 75 as of *December 17, 1991*; revise §§ 71.11 and 71.19 as of October 15, 1992; and revise all of Part 71 to reclassify U.S. airspace in accordance with the ICAO designations as of September 16, 1993. (Further information on the amendments to Part 71 appears in this discussion under *Revisions to Part 71.*) Under this amendment the positive control areas (PCAs), jet routes, and area high routes are reclassified as Class A airspace areas; TCAs are reclassified as Class B airspace areas; ARSAs are reclassified as Class C airspace areas; control zones for airports with operating control towers and airport traffic areas that are not associated with the primary airport of a TCA or an ARSA are reclassified as Class D airspace areas; all Federal airways, the Continental Control Area, control areas associated with jet routes outside the Continental Control Area, additional control areas, control area extensions, control zones for airports without operating control towers, transition areas, and area low routes are reclassified as Class E airspace areas; and airspace which is not otherwise designated as the Continental Control Area, a control area, a control zone, a terminal control area, an airport radar service area, a transition area, or special use airspace is reclassified as Class G airspace. Because airport

Section 91.215 is amended by relaxing current restraints on ATC in authorizing deviations to operators of aircraft that are not equipped with transponders. The amendment clarifies that the ATC facility having jurisdiction over the airspace concerned is permitted to authorize deviations from the transponder requirements in § 91.215(b) and that a request for a deviation due to an inoperative transponder or an operating transponder without operating automatic pressure altitude reporting equipment having Mode C capability may be made at any time. To provide maximum flexibility to ATC and aircraft operators, this amendment has an effective date of December 12, 1991.

Amendments to Parts 11, 45, 61, 65, 93, 101, 103, 105, 121, 127, 135, 137, 139, and 171 change the terminology to integrate the adopted airspace classifications into respective regulations that refer to those airspace assignments and operating rules. In addition, § 11.61(c) is amended to meet an administrative change within the FAA for titles of persons under the term "Director."

The final rule includes modifications to the proposed rules based on amendments to the FAR that have become effective since the publication of NPRM No. 89–28. The section numbers to Part 91 are changed to match the section numbers designated by Amendment No. 91–211, Revision of General Operating and Flight Rules (54 FR 34292; August 19, 1989). Sections 91.129 and 91.130 are modified to include revisions to § 91.130 by Amendment No. 91–215, Airport Radar Service Area (ARSA) Communication Requirement (55 FR 17736; April 26, 1990). Section 91.131(c) is modified to include revisions from Amendment No. 91–216, Navigational Equipment Requirement in a Terminal Control Area (TCA) and Visual Flight Rules (VFR) Operations (55 FR 24822; June 18, 1990). Section 91.117(a) is modified to include revision by Amendment No. 91–219, Revision to General Operating and Flight Rules (55 FR 34707; August 24, 1990).

Section 91.155(b)(1) is modified to include a revision by Amendment No. 91–224, Inapplicability of Basic VFR Weather Minimums for Helicopter Operations (56 FR 48088; September 23, 1991). Section 91.155(c) was revised by Amendment No. 91-213, Night-Visual Flight Rules Visibility and Distance from Cloud Minimums (55 FR 10610; March 22, 1990) and was corrected on July 19, 1990 (55 FR 29552) and November 13, 1990 (55 FR 47309).

In this amendment, the FAA does not adopt the proposal to lower the Continental Control Area to 1,200 feet above the surface and to establish the United States Control Area as proposed in NPRM No. 88–2. The FAA will not adopt this proposal and the regulatory agenda will be revised to delete the U.S. Control Area project.

On October 4, 1990, the FAA established SFAR No. 60—Air Traffic Control System Emergency Operations (55 FR 40758) and on December 5, 1990, the FAA established SFAR No. 62—Suspension of Certain Aircraft Operations from the Transponder with Automatic Pressure Altitude Reporting Capability Requirement (55 FR 50302). These SFARs are revised by replacing references to such terms as "terminal control area" with "Class B airspace area" to integrate the appropriate airspace classification.

Obsolete clauses in the existing rule are deleted and typographical errors in the proposal are corrected. The final rule also revises affected paragraphs of the existing rule requiring modification as a result of the rulemaking action but not included in NPRM No. 89–28. The modifications to these paragraphs replace such terms as "terminal control area" and "control zone" with language to integrate the appropriate airspace classification.

Under airspace reclassification, the Sabre U.S. Army Heliport (Tennessee) Airport Traffic Area will become a Class D airspace area; the Jacksonville, Florida, Navy Airport Traffic Area will become three separate but adjoining Class D airspace areas; and the El Toro, California, Special Air Traffic Rules will become part of the El Toro Class C airspace area. Currently, these airports operate under special air traffic rules in Subparts N, O, and R of Part 93. To achieve a goal of airspace reclassification, which is to simplify airspace, the existing rules for these airspace areas are to be deleted as of September 16, 1993. Therefore, this amendment removes and reserves Subparts N, O, and R of Part 93 as of September 16, 1993.

Part 75—Establishment of Jet Routes & Area High Routes		Part 71, Subpart M—Jet Routes & Area High Routes	
§ 75.1	Applicability.	§ 71.601	Applicability.
§ 75.11	Jet routes.	§ 71.603	Jet routes.
§ 75.13	Area routes above 18,000 feet MSL.	§ 71.605	Area routes above 18,000 feet MSL.
§ 75.100	Jet routes.	§ 71.607	Jet route descriptions.
§ 75.400	Area high routes.	§ 71.609	Area high route descriptions.

Sections 71.607, Jet route descriptions, and 71.609, Area high route descriptions are not set forth in the full text of this final rule. The complete listing for all jet routes and area high routes can be found in FAA Order 7400.7, *Compilation of Regulations*, which was last published as of April 30, 1991, and effective November 1, 1991. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of this order may be obtained from the Document Inspection Facility, APA–220, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, (202) 267-3484. Copies may be inspected in Docket Number 24456 at the Federal Aviation Administration, Office of the Chief Counsel, AGC–10, Room 915G, 800 Independence Avenue, SW., Washington, D.C. 20591 weekdays between 8:30 a.m. and 5 p.m. or at the Office of the Federal Register, 1100 L Street, N.W., Room 8401, Washington, D.C. The Part 75 sections referenced in FAA Order 7400.7 will be redesignated as Part 71 sections in the next revision to FAA Order 7400.7.

The second revision amends existing § 71.11, Control zone, and § 71.19, Bearings; radials; miles, and is effective October 15, 1992. This revision relates to the FAA's parallel reviews of certain airspace areas. The revision to § 71.11 permits the Administrator to terminate the vertical limit of a control zone at a specified altitude. The revision to § 71.19 provides for the conversion from statute miles to nautical miles and consists of the same language as § 71.7 that is effective September 16, 1993. More detail on the review of certain airspace areas is found under the title *Implementation of Airspace Reclassification.*

The third revision to Part 71 establishes a new Part 71 that includes the adopted airspace designations. This amendment, which is effective September 16, 1993, transfers the current sections of existing Part 71, including Subpart M—Jet Routes and Area High Routes, to this new Part 71. The following table lists the sections of existing Part 71, including Subpart M and the corresponding sections in the new Part 71, that are effective September 16, 1993. Subparts B through K and §§ 71.501(b), 71.607, and 71.609, which list airspace descriptions, are not set forth in the full text of this final rule. The complete listing for these airspace designations can be found in FAA Order 7400.9, *Airspace Reclassification,* which is effective September 16, 1993. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of this order may be obtained from the Document Inspection Facility, APA-220, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, D.C. 20591, (202) 267-3484. Copies may be inspected in Docket Number 24456 at the Federal Aviation Administration, Office of the Chief Counsel, AGC–10, Room 915G, 800 Independence Avenue, SW., Washington, D.C. 20591 weekdays between 8:30 a.m. and 5 p.m. or at the Office of the Federal Register, 1100 L Street, N.W., Room 8401, Washington, D.C.

Existing Part 71	Revised Part 71 that is effective September 16, 1993, and FAA Order 7400.9
Subpart A—General	*Subpart A—General; Class A airspace*

§ 71.11	Control zones.		Not applicable.
§ 71.12	Terminal control areas.	§ 71.41	Class B airspace.
§ 71.13	Transition areas.	§ 71.71	Class E airspace.
§ 71.14	Airport radar service areas.	§ 71.51	Class C airspace.
§ 71.15	Positive control areas.	§ 71.31	Class A airspace.
§ 71.17	Reporting points.	§ 71.5	Reporting Points.
§ 71.19	Bearings; Radials; Miles.	§ 71.7	Bearings, radials, mileages.
	Subpart B—Colored Federal Airways		***Subpart E—Class E Airspace***
§ 71.101	Designation.	Subpart E of FAA Order 7400.9.	
§ 71.103	Green Federal airways.	Subpart E of FAA Order 7400.9.	
§ 71.105	Amber Federal airways.	Subpart E of FAA Order 7400.9.	
§ 71.107	Red Federal airways.	Subpart E of FAA Order 7400.9.	
§ 71.109	Blue Federal airways.	Subpart E of FAA Order 7400.9.	
	Subpart C—VOR Federal Airways		***Subpart E—Class E Airspace***
§ 71.121	Designation.	§ 71.79	Designation of VOR Federal airways.
§ 71.123	Domestic VOR Federal airways.	Subpart E of FAA Order 7400.9.	
§ 71.125	Alaskan VOR Federal airways.	Subpart E of FAA Order 7400.9.	
§ 71.127	Hawaiian VOR Federal airways.	Subpart E of FAA Order 7400.9.	
	Subpart D—Continental Control Area		***Subpart E—Class E Airspace***
§ 71.151	Restricted areas included.	Subpart E of FAA Order 7400.9.	
	Subpart E—Control Areas and Control Area Extensions		***Subpart E—Class E Airspace***
§ 71.161	Designation of control areas associated with jet routes outside the continental control area.	§ 71.71	Class E airspace and Subpart E of FAA Order 7400.9.
§ 71.163	Designation of additional control areas.	§ 71.71	Class E airspace and Subpart E of FAA Order 7400.9.
§ 71.165	Designation of control areas extensions.	Subpart E of FAA Order 7400.9.	
	Subpart F—Control Zones		***Subpart D—Class D Airspace***
			Subpart E—Class E Airspace
§ 71.171	Designation.	Subpart D of FAA Order 7400.9.	

	Subpart I—Reporting Points	***Subpart H—Reporting Points***
§ 71.201	Designation.	§ 71.901 Applicability.
§ 71.203	Domestic low altitude reporting points.	Subpart H of FAA Order 7400.9.
§ 71.207	Domestic high altitude reporting points.	Subpart H of FAA Order 7400.9.
§ 71.209	Other domestic reporting points.	Subpart H of FAA Order 7400.9.
§ 71.211	Alaskan low altitude reporting points.	Subpart H of FAA Order 7400.9.
§ 71.213	Alaskan high altitude reporting points.	Subpart H of FAA Order 7400.9.
§ 71.215	Hawaiian reporting points.	Subpart H of FAA Order 7400.9.
	Subpart J—Area Low Routes	***Subpart E—Class E Airspace***
§ 71.301	Designation.	Subpart E of FAA Order 7400.9.
	Subpart K—Terminal Control Areas	***Subpart B—Class B Airspace***
§ 71.401(a)	Designation.	Subpart B of FAA Order 7400.9.
§ 71.401(b)	Terminal control areas.	Subpart B of FAA Order 7400.9.
	Subpart L—Airport Radar Service Areas	***Subpart C—Class C Airspace***
§ 71.501	Designation.	Subpart C of FAA Order 7400.9.
	Subpart M—Jet Routes and Area High Routes	***Subpart A—General; Class A Airspace***
§ 71.601	Applicability.	Not applicable.
§ 71.603	Jet routes.	Subpart A of FAA Order 7400.9.
§ 71.605	Area routes above 18,000 feet MSL.	Subpart A of FAA Order 7400.9.
§ 71.607	Jet route descriptions.	Subpart A of FAA Order 7400.9.
§ 71.609	Area high route descriptions.	Subpart A of FAA Order 7400.9.

Discussion of Comments

A total of 205 commenters submitted comments to Docket No. 24456 on NPRM No. 89–28. The FAA considered these comments in the adoption of this rule and changes to the proposals were made accordingly. Some comments did not specifically apply to any particular proposal addressed in NPRM No. 89–28. These comments related to the requirements for a transponder with Mode C capabilities, the FAA's anti-drug program, and the proposed TCA for the Washington-Baltimore metropolitan area.

Comments submitted on NPRM No. 89–28 reflect the views of a broad spectrum of the aviation public. The commenters included individuals as well as organizations representing commercial and general aviation pilots. Organizations that commented on NPRM No. 89-28 include: AOPA, ALPA, Air Traffic

One hundred and forty-one comments on the proposal to reclassify U.S. airspace to meet ICAO standards were submitted. Sixty-eight supported reclassification and 69 opposed reclassification. Four commenters neither supported nor opposed the reclassification effort, but offered observations.

The 68 supporting comments include those submitted by the ATA, ATCA, and COPA. The COPA stated that on an average, approximately 60,000 general aviation aircraft cross the U.S./Canadian border each year. Some commenters stated that the proposed classifications are easier to understand than the current classifications and noted that the proposed classifications would help develop standardization. Two flight instructors commented that the proposed classifications would aid in the teaching of the airspace system to new pilots.

The 69 opposing comments include the Arizona Pilots Association, EAA, and SSA. Several comments, including EAA's, asserted that the current airspace designation names are more descriptive, and hence, easier to remember. Several comments, including one from the Arizona Pilots Association, stated that the proposal would cause confusion, while other commenters alleged that the proposal would only benefit pilots who operate internationally.

Both the SSA and the Arizona Pilots Association recommend that existing airspace nomenclature be retained and a table be included in the *Airman's Information Manual* (AIM) or Part 91 to correlate U.S. airspace designations and ICAO equivalents.

The four comments submitted that do not directly support or oppose the proposal include those from the Alaska Airmen's Association, ALPA, and AOPA. The AOPA expressed concerns about how pilots would be reeducated during the transition phase that would precede the adoption of the proposed airspace reclassification. AOPA recommended that the FAA take five steps to ensure proper pilot education: (1) convene a government, industry, and user meeting before the issuance of a final rule to consider the implications of final rule adoption; (2) ensure that all necessary funding is in place, including monies for the specific purpose of pilot education; (3) adopt a dual airspace system during the transition phase; (4) coordinate with the National Oceanic and Atmospheric Administration (NOAA) to ensure that all charts are printed in a timely manner; and (5) amend the flight review requirements to reflect explicitly the need to discuss airspace classifications. The FAA agrees that the aviation public needs to be educated in airspace reclassification. Therefore, the FAA has developed an education and transition program, which is discussed under "Education of the Aviation Community."

As proposed, the FAA will reclassify U.S. airspace in accordance with ICAO standards. Airspace areas, with the exception of special use airspace (SUA) designations, will be classified by a single alphabet character. The FAA believes that reclassification of U.S. airspace simplifies the airspace system, achieves international commonality, enhances aviation safety, and satisfies the responsibility of the United States as a member of ICAO.

Some commenters misunderstood the proposal on airspace reclassification. These commenters understood Class A airspace areas to be en route airspace and Class B, Class C, and Class D airspace areas to be terminal airspace. The recommended ICAO airspace classes are not based on whether the airspace area is designated for "en route" or "terminal" operations, but rather on other factors that include type of operation (i.e., IFR, VFR) and ATC services provided. (The table below lists the new airspace classifications, its equivalent in the existing airspace classification, and its features, which would apply to terminal and en route airspace areas.) For example, under this rule Class C airspace is designated in terminal areas. Class C airspace in another country could be designated in en route areas. However, the type of operation, ATC services provided, minimum pilot qualifications, two-way radio requirements, and VFR minimum visibility and distance from cloud requirements in that country's Class C airspace will be similar to the Class C airspace areas designated in the United States. As adopted by the FAA, Class A airspace areas are designated in positive control en route areas; Class B, Class C, and Class D airspace areas are designated in terminal areas; and Class E airspace areas are designated in both en route (low altitude) and terminal areas. However, the rules are written in a manner that the classes of airspace will not be limited to terminal or en route airspace areas. For example, if a regulation

				Zones		
Operations Permitted	IFR	IFR and VRF	IFR and VFR	IFR and VFR	IFR and VFR	IFR and VFR
Entry Prerequisites	ATC clearance	ATC clearance	ATC clearance for IFR Radio contact for all	ATC clearance for IFR Radio contact for all	ATC clearance for IFR Radio contact for all IFR	None
Minimum Pilot Qualifications	Instrument rating	Private or student certificate	Student certificate	Student certificate	Student certificate	Student certificate
Two-way radio communications	Yes	Yes	Yes	Yes	Yes for IFR operations	No
VFR Minimum Visibility	Not applicable	3 statute miles	3 statute miles	3 statute miles	*3 statute miles	**1 statute mile
VFR Minimum Distance from Clouds	Not applicable	Clear of clouds	500 feet below, 1,000 feet above, and 2,000 feet horizontal	500 feet below, 1,000 feet above, and 2,000 feet horizontal	*500 feet below, 1,000 feet above, and 2,000 feet horizontal	**500 feet below, 1,000 feet above, and 2,000 feet horizontal
Aircraft Separation	All	All	IFR, SVFR, and runway operations	IFR, SVFR and runway operations	IFR, SVFR	None
Conflict Resolution	Not applicable	Not applicable	Between IFR and VFR operations	No	No	No
Traffic Advisories	Not applicable	Not applicable	Yes	Workload permitting	Workload permitting	Workload permitting
Safety Advisories	Yes	Yes	Yes	Yes	Yes	Yes

*Different visibility minimum and distance from cloud requirements exist for operations above 10,000 feet MSL.

**Different visibility minima and distance from cloud requirements exist for night operations, operations above 10,000 feet MSL, and operations below 1,200 feet AGL.

Offshore Airspace

The FAA adopts, as proposed, the NAR recommendations NAR 3–2.1.1—Offshore Airspace Nomenclature, NAR 3–2.1.2—Offshore Control Area Uniform Base, NAR 3–2.1.3—Offshore Control Area Identification, and NAR 3–2.1.4—Offshore Airspace Classification, which consider offshore airspace areas. However, NAR 3–2.1.2, which recommends a uniform base for offshore control areas of 1,200 feet above the surface unless otherwise designated, and NAR 3-2.1.3, which recommends that offshore control areas be identified with a name as opposed to a number are contingent on the FAA's further review. (More details on the review process appear later in this document under the title *Implementation of Airspace Reclassification.*) Any changes to offshore airspace areas resulting from the FAA's review will be accomplished by separate rulemaking actions. The FAA's review is being conducted in compliance with Executive Order 10854, which requires FAA consultation with both the Departments of State and Defense before designating controlled international airspace. The FAA expects that most offshore airspace areas will be classified as Class E or Class A airspace areas.

discussion following.

AIRSPACE RECLASSIFICATION TRANSITION

Tentative Date	*Event*
October 15, 1992	First sectional aeronautical charts (SAC), world aeronautical charts (WAC), and terminal aeronautical charts (TAC) are published with legends that indicate both existing and future airspace classifications.
March 4, 1993	Initial charting changes are completed for the SAC and TAC.
June 24, 1993	North Pacific, Gulf of Mexico, and Caribbean planning charts are published with legends that indicate both existing and future airspace classifications.
August 19, 1993	Flight Case Planning and North Atlantic Route charts are published with legends that indicate existing and future airspace classifications.
September 16, 1993	New airspace classifications become effective. All charts begin publication with legends that indicate both the new airspace classification and the former airspace classification. All related publications are updated.
March 3, 1994	First charts are published with legends that only indicate the new airspace classifications.
August 17, 1994	All charts are published with legends that only indicate the new airspace classifications.

Coordination with a task group of the IACC and the NOS will continue throughout the transition. An anticipated modification to the symbols on aeronautical charts is the addition of a segmented magenta line to represent the controlled airspace area for airports without operating control towers that extends upward from the surface (Class E airspace). A segmented blue line (which currently depicts a control zone) will denote a Class D airspace area, the controlled airspace for airports with operating control towers that are not the primary airport of a TCA or an ARSA.

The legends in aeronautical charts will include both the existing airspace classifications and the airspace classifications to be effective September 16, 1993. For example, the solid blue line that symbolizes a TCA will be followed by "TCA (Class B)." The first charts with a dual legend will be published October 15, 1992. Commencing September 16, 1993, the legends on these charts will be reversed [e.g., a solid blue line will be followed by "Class B (TCA)"]. Between March 3 and August 17, 1994, the use of dual indication legends will be phased out.

Between October 1992 and March 1993, educational materials such as pocket guides, a video, and posters will be issued to instruct the aviation public on airspace reclassification. The FAA will begin to update the AIM and other publications, as well as FAA orders, manuals, handbooks, and advisory circulars that must be revised to include the new airspace classifications and an explanation of the transition and implementation procedures.

The transition and implementation of the Airspace Reclassification final rule also will include parallel reviews of certain current airspace designations to meet the new airspace classifications. A full discussion on this review appears later in this document under the title *Implementation of Airspace Reclassification.*

Class A Airspace

NPRM No. 89–28 proposed to reclassify the PCAs as Class A airspace areas with no other alterations to this airspace. Four commenters, including AOPA, neither supported nor opposed this classification; however, they offered comments and modifications. Some commenters stated that if the FAA adopts

Class B Airspace

NPRM No. 89–28 proposed to reclassify TCAs as Class B airspace areas and to amend the minimum distances by which aircraft operating under VFR must remain from clouds. The current VFR minimum distance requirements of 500 feet below, 1,000 feet above, and 2,000 feet horizontal from clouds will be amended to require that the pilot must remain clear of clouds.

One comment supports and two comments specifically oppose the proposed reclassification. Twelve comments on the proposal to amend minimum distance from clouds for VFR operations in Class B airspace areas were received. Eight of these comments support and four oppose the proposal.

The comments submitted in support of the proposal to reclassify TCAs as Class B airspace areas and to modify the minimum distances from cloud for VFR operations include those from AOPA, the Alaska Airmen's Association, EAA, and SSA. AOPA stated that the proposal "is a positive step in improvement of VFR traffic flow within" Class B airspace areas.

A commenter in support of reclassification stated that some of the areas to be classified as Class B airspace areas could be redesignated as Class C airspace areas.

The four comments submitted in opposition to the proposed amendment on distance from cloud requirements for VFR operations include a comment from ALPA. Some commenters stated that the proposal to modify the minimum distance from clouds for VFR flight in Class B airspace areas reduces the existing margin of safety. ALPA further stated that the ability of a pilot to maintain visual contact with other aircraft is reduced if aircraft operate in close proximity to clouds. One commenter stated that the proposals do not answer the need for clear radio failure procedures in Class B airspace areas. Another commenter stated that Class B airspace areas are actually divided into two types of Class B airspace: one in which a private pilot certificate is required and one in which, at a minimum, only a student pilot certificate is required.

This rulemaking reclassifies existing airspace areas with the equivalent recommended ICAO airspace area. It does not redesignate existing airspace areas. For example, the redesignation of a Class B airspace area (TCA) to a Class C airspace area (ARSA) is beyond the scope of this rulemaking. The FAA believes that the elimination of terminal areas designated as Class B airspace areas would create a substantial adverse impact on the safe and efficient control of air traffic in those high volume terminal areas. Class B airspace areas, like the TCAs that preceded them, provide more efficient control in terminal areas where there is a large volume of air traffic and where a high percentage of that traffic is large turbine-powered aircraft. Additionally, on July 25, 1991, the FAA revised FAA Order 7110.65, *Air Traffic Control*, by adopting specific separation standards for operations under VFR in existing TCAs. These standards require air traffic controllers to separate aircraft operating under VFR in existing TCAs from other aircraft operating under VFR and IFR.

As stated in NPRM No. 89–28 in response to NAR 1–7.2.9—Recommended VFR Minima, the FAA views the relaxation of the distance from cloud requirements for VFR operations as a modification that would enhance rather than reduce safety. Under the existing regulations, a pilot operating an aircraft under VFR in a TCA (Class B airspace) is provided with ATC services and is subject to ATC clearances and instructions. For the pilot operating under VFR to remain specific distances from clouds, the pilot must alter course or assigned heading/route, which is a disruption to traffic flow and could be a compromise to safety. The amendment will increase safety for pilots operating under VFR and ATC by permitting these pilots to remain clear of clouds in Class B airspace areas, but not requiring them to remain a specific distance from clouds. However, if an ATC instruction to a pilot operating an aircraft under VFR could place that aircraft in a cloud, FAR § 91.3, *Responsibility and authority of the pilot in command,* requires the pilot in command to be responsible for ensuring that the aircraft does not enter a cloud and any such ATC instruction may be refused.

The FAA accepted NAR 1–7.3.3—Pilot Requirements for Operations in a TCA, under the provisions of the existing requirements; hence, the reclassification of TCAs as Class B airspace areas meets existing regulations on minimum airman certificate levels. Section 61.95 of the FAR, which lists student pilot requirements for operations in a TCA (Class B airspace), is revised to meet the new airspace classification. Solo student pilot activity is, under both the existing regulations and this final rule, prohibited at certain airports.

Class C Airspace

Three comments were submitted on the reclassification of ARSAs as Class C airspace areas. None of the comments specifically support or oppose the reclassification. All of the comments, including one from EAA, addressed additional modifications.

Two commenters noted that the proposal for VFR operations in Class B airspace areas to remain clear of clouds could be applied to Class C airspace areas.

In its comment, EAA opposed any increase in the size of Class C airspace areas. Other recommendations by commenters included the need for clear radio failure procedures and the need for designated areas that do not require communications with ATC when the pilot desires to use an uncontrolled airport within Class C airspace areas.

As proposed, the FAA will reclassify ARSAs as Class C airspace areas. No other modifications to Class C airspace areas or changes in operating rules were proposed. An ARSA that currently operates on a part-time basis is classified as Class C part-time and Class D or Class E at other times.

Aircraft operating under VFR in Class C airspace areas operate under less stringent requirements than aircraft operating under VFR in Class B airspace areas and are not provided the same separation by ATC. Therefore, the relaxation of the VFR distance from cloud requirements in Class C airspace areas to remain clear of clouds would not be in accordance with safety precautions. As noted earlier, lost communication procedures are addressed in paragraph 470, Two-way Radio Communications Failure, of the AIM. Since Class C airspace areas often have a high number of aircraft that operate under IFR, a relaxation of existing communications requirements would not be in the interest of safety. Any modifications to the dimensions or operating requirements for Class C airspace areas are outside the scope of this rulemaking.

Class D Airspace

NPRM No. 89–28 proposed to reclassify control zones for airports with operating control towers and airport traffic areas, not associated with a TCA or an ARSA, as Class D airspace areas. In addition, NPRM No. 89–28 proposed to: (1) raise the ceiling to up to, and including, 4,000 feet from the surface of the airport; (2) require aircraft in Class D airspace areas to establish two-way radio communications with ATC; and (3) convert the lateral unit of measurement from statute miles to nautical miles.

One hundred and forty comments concerning the proposal to establish the ceiling of the Class D airspace areas at 4,000 feet above the surface were submitted. All of the comments opposed the proposal.

Of the 83 comments regarding the proposal to require pilots who operate in Class D airspace areas to establish two-way radio communications with ATC, two supported the proposal and 80 opposed it. One comment neither supported nor opposed the proposals.

One hundred and forty-three comments related to the proposal to convert the lateral unit of measurement of Class D airspace areas from statute to nautical miles were submitted. Most interpreted the proposal to mean that the lateral size of the airspace areas would change from 5 statute miles to 5 nautical miles. (The FAA's intent in NPRM No. 89–28 is to convert statute miles as a unit of measurement to the equivalent in nautical miles.) Twelve comments supported and 131 comments opposed the proposal.

towers.

The 140 commenters that opposed the proposed ceiling of 4,000 feet above the surface included AOPA, the Alaska Airmen's Association, the Arizona Pilots Association, EAA, the Ohio Department of Transportation, and SSA. These same organizations are represented in the 131 comments that opposed the proposed conversion from statute to nautical miles and the 80 comments that oppose the proposed two-way radio communications requirements with ATC.

Several comments, including one from EAA, were submitted on the effects of the proposed ceiling modification and communications requirements on operations under SFAR No. 51–1—Special Flight Rules in the Vicinity of Los Angeles International Airport. According to the comments, the proposal would raise the ceiling of the airport traffic areas at Santa Monica and Hawthorne Airports into the Special Flight Rules Area. The commenters also stated that the proposed two-way radio communication requirements with ATC may not allow aircraft, especially those with one radio, to listen to an advisory frequency.

Some commenters, including SSA, stated that airport traffic areas (Class D airspace) could be depicted on aeronautical charts. Several commenters, including AOPA, the Alaska Airmen's Association, EAA, and the Ohio Department of Transportation stated that the proposals would increase air traffic controller workload. Some comments, including one from AOPA, stated that the proposal would increase pilot workload or that no safety benefit exists for the proposed modifications.

Several commenters, including AOPA and EAA, requested that the ceiling of Class D airspace areas be lowered to 2,000 feet or 2,500 feet above the surface. The commenters stated that the lower altitudes are adequate for the arrival and departure of aircraft. Other commenters, including the Alaska Airmen's Association and SSA, recommended retaining the current ceiling of 3,000 feet above the surface.

Commenters stated that the proposals for modifying the size of airspace and for requiring two-way radio communications with ATC would be a burden to aircraft that fly at low altitudes, and that some aircraft would need to fly a minimum of 5,500 feet MSL as opposed to 3,500 feet MSL. Some commenters stated that the proposal would burden pilots of airplanes that do not have radios. One commenter noted that pilots who fly older aircraft with no radios or navigational aids do not pose a threat to commercial aviation.

Several comments, including those submitted by the AOPA and the Alaska Airmen's Association, stated that the proposal for two-way radio communications with ATC would not permit aircraft to listen to the common traffic advisory frequency (CTAF) of satellite airports. Additional comments, including those submitted by the AOPA and EAA, noted that air traffic controllers in control towers cannot provide effective traffic advisories for satellite airports. Some commenters, including EAA and the Ohio Department of Transportation, stated that the proposed two-way radio communication requirements with ATC are not necessary because operations at satellite airports usually do not interfere with airports with operating control towers. Another commenter noted that a pilot who desires to use a satellite airport and needs to fly near an airport with an operating control tower would need to notify the local ATC facility.

Commenters, including the Arizona Pilots Association and EAA, recommended that the lateral unit of measurement of Class D airspace areas be designated at 4 nautical miles.

As proposed, control zones for airports with operating control towers and airport traffic areas that are not associated with a TCA or an ARSA are reclassified as Class D airspace areas. After considering public comment and re-examining technical criteria, the FAA has determined that: (1) the ceiling of a Class D airspace area (designated for an airport) will normally be designated at 2,500 feet above the surface of the airport converted to mean sea level (MSL), and rounded to the nearest 100 foot increment; (2) two-way radio communications with ATC will be required; and (3) the lateral dimensions will be expressed in nautical miles rounded up to the nearest tenth of a mile. The actual lateral and vertical dimensions will be determined on an individual basis using revised criteria in FAA Order 7400.2C, *Procedures for Handling Airspace Matters*. (More detail on the review of airspace appears under the title *Implementation of Airspace Reclassification*.)

Vertical Limit of Class D Airspace Areas

A goal of airspace reclassification is to enhance safety. The FAA is of the opinion that the existing airspace designations of an ARSA, which has a ceiling of "up to and including" 4,000 feet above the surface, and an airport traffic area, which has a ceiling of "up to, but not including," 3,000 feet above the surface, has caused confusion, which does not enhance safety. To promote uniformity, the FAA in NPRM No. 89–28 proposed that the ceiling of Class C, Class D, and Class E airspace areas that extend upward from the surface be established at "up to, and including" 4,000 feet above the surface. Many of the comments on this proposal were opposed to this modification. As previously stated, the FAA has determined that the ceiling of Class D airspace areas will normally be designated at up to, and including, 2,500 feet above the surface of the airport expressed in MSL. To further enhance uniformity, the ceiling of Class E airspace areas that extend upward from the surface normally will also have a ceiling established at up to, and including, 2,500 feet above the surface of the airport expressed in MSL. A ceiling of 2,500 feet above the surface will provide adequate vertical airspace to protect traffic patterns. However, the FAA emphasizes that the ceiling of a Class D or a Class E airspace area will reflect the conditions of the particular airspace area. For example, if local conditions warrant, the ceiling could be designated at more than 2,500 feet above the surface (e.g., 2,700 or 3,000 feet above the surface). Conversely, some airports with limited volume of nonturbine-powered aircraft may have a lower vertical limit.

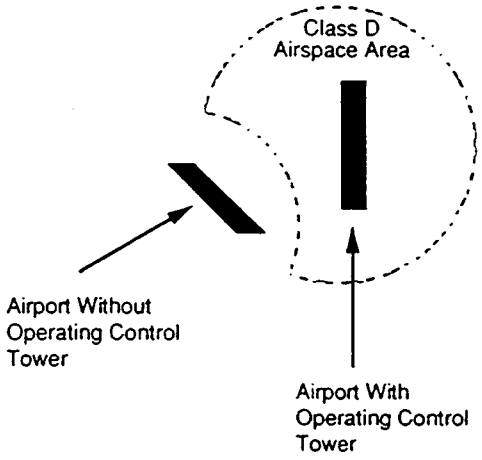
The decision to use 2,500 feet above the surface is based on recent FAA analysis of vertical airspace necessary to protect traffic patterns and a review of public comment to lower the ceiling of an airport traffic area. The FAA's analysis demonstrates that the 2000-foot vertical limit is insufficient since it often does not protect traffic patterns for high performance aircraft.

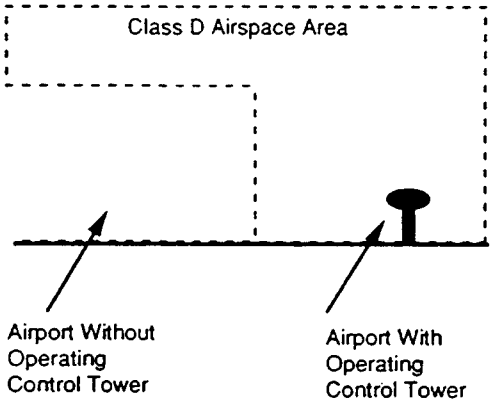
Two-Way Radio Communications in and Lateral Dimensions of Class D Airspace Areas

The FAA has determined that in order to meet safety standards, two-way radio communications with ATC must be established in Class D airspace areas. Task Group 1–2.3, which recommended NAR 1–2.3.2—Two-Way Radio Requirements in Airport Traffic Areas, stated that "pilots have been issued violations, or critical injuries have occurred because pilots were not in compliance with the two-way radio communications requirements."

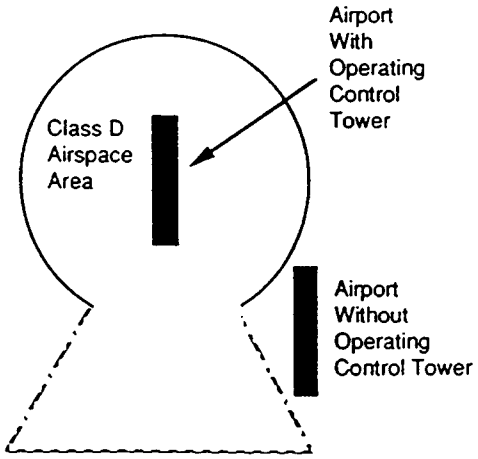
The FAA also has determined that the lateral distance of Class D airspace areas will be based on the instrument procedures for which the controlled airspace is established. Therefore, the dimensions may not be in a circular shape that is similar to the current airport traffic areas or control zones.

Many commenters stated that the communications requirements associated with operations at satellite airports within Class D airspace areas would prevent them from using CTAF procedures. The FAA generally agrees with these comments; consequently, the FAA will individually review control zones and associated transition areas that are not associated with the primary airport of a TCA or an ARSA. The review of the designation of Class D airspace areas will be conducted to determine the necessary size of the area and will exclude satellite airports to the maximum extent practicable and consistent with safety. For example, a satellite airport without an operating control tower might have a Class E airspace area carved out of a Class D airspace area, or a Class E airspace area might be placed under a shelf of a Class D airspace area. (See Figure 1.) In another example, the portions of an existing control zone that extend beyond the existing limits of an airport traffic area (extension used for instrument approaches) may be designated only by using the airspace necessary under the terminal instrument procedures (TERPs) criteria. (See Figure 1.) When a satellite airport is excluded, a pilot who is operating an aircraft in the immediate vicinity of that satellite airport and who does not otherwise penetrate airspace where two-way radio communications with ATC are required will be free to communicate on the CTAF of that satellite airport.

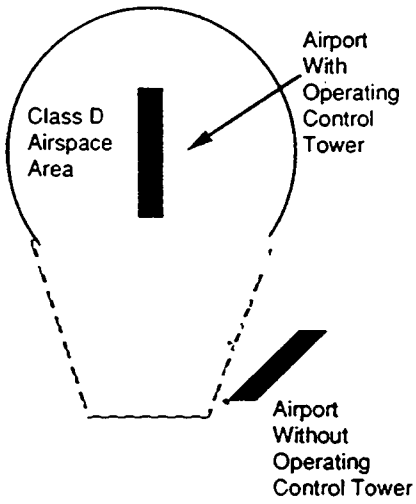




TERPS' Trapezoid Going Toward the NAVAID



TERPS' Trapezoid Going Away from the NAVAID



towers, transition areas, and area low routes. The five comments submitted on this proposal neither supported nor opposed the proposal, but offered suggestions.

One commenter noted that the current names are descriptions of how the airspace area is to be used (i.e., transition areas, airways) and that under the proposal, airways would still be necessary. The SSA recommended the continued use of the term ''control zone'' for airspace extending upward from the surface that is independent of Class B, Class C, or Class D airspace areas. They also recommended that control zones should extend to the floor of overlying controlled airspace. One commenter recommended that the floor of Class E airspace areas that are now 1,200 feet above ground level (AGL) be raised to 1,500 or 2,200 feet AGL and noted that the floor of Class E airspace areas should not be below the minimum en route IFR altitude (MEA) in mountainous regions.

The FAA will adopt the classification of Class E airspace areas as proposed. This classification will not eliminate the requirement for Federal airways, which are specified in Part 71. However, this classification will eliminate the designation of control zones. Control zones for airports without operating control towers are classified as Class E airspace areas designated for an airport that extend upward from the surface.

The FAA believes that the reclassification of control zones for airports without operating control towers as Class E airspace areas will not cause confusion. As noted earlier, such airspace areas will be depicted on visual aeronautical charts by a segmented magenta line. Under existing regulations, a control zone usually has a 5-statute mile radius and ascends to the base of the Continental Control Area. The FAA's review process, using the revised criteria in FAA Order 7400.2C, will look at the dimensions of each control zone and associated transition areas. Each review will include a review of instrument approach procedures, as well as local terrain to determine the actual airspace needed to contain IFR operations.

The floor of Class E airspace areas, which do not extend upward from the surface, will remain the same as existing airspace areas (e.g., 700 feet AGL, 1,200 feet AGL, 1,500 feet AGL, 14,500 feet MSL). Any modifications to the floor of Class E airspace areas are beyond the scope of this rulemaking.

Class G Airspace

NPRM No. 89–28 proposed to reclassify airspace that is not otherwise designated as the Continental Control Area, a control area, a control zone, a terminal control area, a transition area, or SUA as Class G airspace areas. Of the six comments submitted, four comments opposed the proposal and two offered suggestions.

The four opposing comments, including EAA's comment, understood the Class G airspace areas to be airspace below 700 feet AGL.

The two comments that neither supported nor opposed the proposal included the comment from the ATA. The ATA recommended that Class G airspace areas be designated as Class F airspace areas.

The FAA has determined that all navigable airspace areas not otherwise designated as Class A, Class B, Class C, Class D, or Class E airspace areas or SUA are classified as Class G airspace areas. Since the proposal to replace the Continental Control Area with the U.S. control area in NPRM No. 88–2 was not adopted, the vertical limit of Class G airspace areas will vary (e.g., 700 feet AGL, 1,200 feet AGL, 1,500 feet AGL, 14,500 feet MSL). In addition, the flight visibility and distance from cloud requirements for operations under VFR proposed in NPRM No. 89–28 are modified to remain consistent with the existing requirements in §§ 91.155 and 103.23.

Class F airspace is omitted from the U.S. airspace classifications because this airspace, as adopted by ICAO, does not have a U.S. equivalent. Class G airspace, as adopted by ICAO, is the equivalent of U.S. uncontrolled airspace.

of airspace areas will be proposed in future FAA rulemaking actions.

Three commenters, including the Alaska Airmen's Association and SSA, noted that NPRM No. 89–28 proposed to define controlled airspace in FAR § 1.1 as airspace in which "all aircraft may be subject to ATC" rather than airspace in which "some or all aircraft may be subject to ATC." According to one commenter, because aircraft operating under VFR are not always subject to ATC in controlled airspace, especially Class E airspace, the current definition is more accurate.

The proposed definition of controlled airspace is adopted in essence but it has been modified to correspond with ICAO's definition of a controlled airspace. Subsequent to the publication of NPRM No. 89–28, ICAO modified its definition of controlled airspace to read as follows: "*Controlled airspace.* An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification. Note—Controlled airspace is a generic term which covers ATS [air traffic services] in airspace Classes A, B, C, D, and E." The proposed FAA definition in NPRM No. 89–28 read: "*Controlled airspace* means airspace designated as Class A, Class B, Class C, Class D, or Class E airspace in Part 71 of this chapter and within which all aircraft may be subject to air traffic control."

While the commenter is essentially correct that all aircraft are not always subject to air traffic control, any aircraft may be subject to ATC if the pilot operates under IFR or if the pilot requests and receives air traffic services. The FAA believes that misunderstandings would be minimized with the adoption of the ICAO definition. The ICAO definition and the proposed definition are essentially synonymous; however, the FAA is confident the adoption of the ICAO definition is consistent with the objectives of airspace reclassification and that it is beneficial to have a common international definition of controlled airspace.

Four commenters, including EAA and SSA, noted that NPRM No. 89–28 only permits Special VFR operations for the purposes of departing from or arriving at an airport. The commenters stated that such a restriction of Special VFR operations would affect pipeline patrol, aerial photography, law enforcement, agricultural, and other special types of operations. EAA also stated that the proposed limitation of 4,000 feet above the surface for Special VFR operations could prevent pilots from climbing to the top of a haze layer.

The FAA will continue to permit Special VFR operations for through flights as well as flights for arrival or departure. Because control zones will be eliminated under Airspace Reclassification, Special VFR operations are only permitted within the ceiling and lateral boundaries of the surface areas of the Class B, Class C, Class D, or Class E airspace designated for an airport. Because the proposal for a uniform ceiling for Class C, Class D, and Class E airspace areas at 4,000 feet above the surface is not adopted, the boundaries of the airspace area in which Special VFR operations are permitted will vary. For example, if a Class C airspace area has a ceiling designated at 4,500 feet MSL and a surface area designated within a 5-nautical mile radius from the airport, Special VFR operations are permitted within that 5-nautical mile radius up to and including 4,500 feet MSL.

One commenter, a flight instructor with a petition signed by additional flight instructors, stated that the language in the proposal on aerobatic flight is vague and could be interpreted to restrict aerobatic operations within existing transition areas and other less crowded airspace areas. The commenter was concerned that the proposed § 91.71(c) could affect spin training at flight schools.

Under this amendment, the term "control zone" will be eliminated. However, the FAA desires to continue restrictions that currently exist in the FAR on operations within control zones. These restrictions will now apply within the lateral boundaries of the surface areas of the Class B, Class C, Class D, or Class E airspace designated for an airport. For example, if a Class E airspace area is designated to extend upward from the surface with a 4.4-nautical mile radius from the airport and a ceiling of 2,600 feet MSL, aerobatic flight will not be permitted below 2,600 feet MSL within a 4.4-nautical mile radius of the airport.

7400.2C and the reviews occur before the effective date of the Airspace Reclassification final rule, the revised criteria are written in existing airspace terminology. Examples of the revised criteria include: (1) converting the lateral unit of measurement from statute miles to nautical miles; (2) conforming existing control zones to be congruent with the lateral dimensions of the surface areas of existing TCAs or ARSAs; (3) redesignating control zones to contain intended operations (not necessarily in a circular configuration); (4) redesignating the vertical limit of control zones from the surface of the earth to a specified altitude (but not to the base of the Continental Control Area); (5) establishing a policy to exclude satellite airports from control zones to the maximum extent practicable, consistent with instrument procedures and safety; and (6) replacing control zone departure extensions with transition areas.

The FAA anticipates that many control zones and associated transition areas would require minor modification. For example, a control zone could be integrated with the associated TCA or ARSA (Class B or Class C airspace area) or a control zone could become either a Class D airspace area or a Class E airspace area that extends upward from the surface.

The reviews will include control zones where a significant change in the current airspace structure is expected. For example, a control zone that extends beyond the perimeter of the associated TCA or ARSA and could require modification of the associated TCA or ARSA (Class B or Class C airspace area). The reviews will also include transition areas not associated with control zones and offshore airspace. Proposed changes that result from these reviews will be promulgated using normal rulemaking procedures.

The reviews could also result in the expansion of controlled airspace. These actions could affect airspace areas associated with non-Federal control towers. Any expansion of controlled airspace will be proposed in future NPRMs.

All necessary changes to the airspace structures are scheduled to be completed by September 16, 1993, the effective date of the Airspace Reclassification final rule.

Changes to the NPRM

This final rule includes several nonsubstantive editorial changes made to NPRM No. 89–28. Changes are also included in this final rule to certain FAR sections that were not included in NPRM No. 89–28 but require changes in terminology to be consistent with the amendments. Three additional subparts in Part 93 are deleted because the rules will not be necessary under airspace reclassification. The sections and subparts, with an explanation of the changes made to them, follow.

SFAR 51–1: The reference to "Terminal Control Area (TCA)" in Section 1 is replaced with "Class B airspace area." The reference to § 91.105(a) in Section 2(a) is replaced with § 91.155(a). The reference to § 91.24(b) in Section 2(b) is replaced with § 91.215(b). The phrase "meet the equipment requirements" in Section 2(b) is replaced with "be equipped as." The reference to § 91.90(a) and § 91.90 in Section 3 is replaced with § 91.131(a) and § 91.131.

SFAR 60: The references to "terminal control area" and "airport radar service area" in Section 3a are replaced with "Class B airspace area" and "Class C airspace area." The phrase "terminal and en route airspace" in Section 3a is replaced with "class of controlled airspace."

SFAR 62: The two references to "terminal control area" in Section 1(a) are replaced with "Class B airspace area." The references to the "Tri-Area TCA" in Section 2(24) and (25) are replaced with "Tri-Area Class B airspace area."

§ 45.22(a)(3)(i): The phrase "the designated airport control zone of the takeoff airport, or within 5 miles of that airport if it has no designated control zone" is replaced with "the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for the takeoff airport, or within 4.4 nautical miles of that airport if it is within Class G airspace."

§ 61.95: All references to "terminal control area" in the title and paragraphs (a), (a)(1), (a)(2), (a)(3), and (b) are replaced with "Class B airspace" or "Class B airspace area."

§ 91.905: The references to §§ 91.127, 91.129, 91.130, 91.131, and 91.135 are replaced with the titles to become effective September 16, 1993, and a reference is added to § 91.126.

§ 93.1(b): The reference to § 93.113, which is to be deleted as of September 16, 1993, is deleted.

Subpart N, Part 93: This subpart on the airport traffic area at the Sabre U.S. Army Heliport (Tennessee) is removed and reserved. On September 16, 1993, this airspace will become a Class D airspace area.

Subpart O, Part 93: This subpart on the Navy airport traffic area at Jacksonville, Florida, is removed and reserved. On September 16, 1993, this airspace will become three separate but adjoining Class D airspace areas.

Subpart R, Part 93: This subpart on the Special Air Traffic Rules at El Toro, California, is removed and reserved. On September 16, 1993, this airspace will become a part of the El Toro Class C airspace area.

§ 135.205(b): The reference to "uncontrolled airspace" is replaced with "Class G airspace." The reference to "control zones" is replaced with "within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport."

§ 139.323(a): The reference to "terminal control area" is replaced with "Class B airspace area."

§ 171.9(e)(1) and (e)(2): All references to "air traffic control areas" are replaced with "controlled airspace."

§ 171.29(d)(1) and (d)(2): All references to "air traffic control areas" are replaced with "controlled airspace."

§ 171.159(e)(1) and (e)(2): Both references to "air traffic control areas" are replaced with "controlled airspace." The reference to "air traffic control zones or areas" is replaced with "controlled airspace."

§ 171.209(d): Both references to "air traffic control areas" are replaced with "controlled airspace." The reference to "air traffic control zones or areas" is replaced with "controlled airspace."

§ 171.323(i): The reference to "air traffic control areas" is replaced with "controlled airspace." The reference to "air traffic control zones or areas" is replaced with "controlled airspace."

Obsolete Dates

Obsolete dates have been removed from §§ 91.215(b)(2), (b)(4), and (b)(5)(ii). Section 91.215(b)(5)(i)(A) is obsolete and is deleted. Section 91.215(b)(5)(i)(B) is incorporated into existing § 91.215(b)(5)(i).

Regulatory Evaluation Summary

This section summarizes the full regulatory evaluation prepared by the FAA that provides more detailed estimates of the economic consequences of this final rule regulatory action. This summary and the full evaluation quantify, to the extent practicable, estimated costs to the private sector, consumers, Federal, State and local governments, as well as anticipated benefits.

Executive Order 12291, dated February 17, 1981, directs Federal agencies to promulgate new regulations or modify existing regulations only if potential benefits to society for each regulatory change outweigh potential costs. The order also requires the preparation of a Regulatory Impact Analysis of all major rules except those responding to emergency situations or other narrowly defined exigencies. A major rule is one that is likely to result in an annual effect on the economy of $100 million or more, a major increase in consumer costs, a significant adverse effect on competition, or one that is highly controversial.

The FAA has determined that this rule is not major as defined in the executive order. Therefore, a full regulatory *analysis*, that includes the identification and evaluation of cost reducing alternatives

designations, standardize equipment requirements and associate appropriate pilot certification requirements as well as certain other requirements associated with each proposed airspace designation. These changes are based primarily on recommendations from a National Airspace Review (NAR) task group and will ultimately allow for increased safety and efficiency in the U.S. airspace and air traffic control system.

Costs

The FAA estimates the total incremental cost that will accrue from the implementation of this final rule to be $1.9 million (discounted, in 1990 dollars). Virtually all cost, which is expected to be incurred by the FAA, will accrue from revisions to aeronautical charts, re-education of the pilot community, and revision of air traffic controller training courses. Each one of these factors is briefly discussed below:

1. Revisions to Aeronautical Charts

A significant cost impact associated with this rule will result from the requirement to change aeronautical charts. These modifications will be incorporated during the regular updating and printing of the charts. Therefore, all costs associated with printing aeronautical charts are assumed to be normal costs of doing business. However, because of dimension and symbol changes that will be needed, the plates used to print the charts will need to be changed, and this will affect most of the aeronautical charts printed.

The total cost of revisions to all charts is estimated by the National Ocean Service based on the summation of the costs of revising each class of the airspace. The total discounted cost is estimated to be $1.2 million.

2. Revision of Air Traffic Training Courses

Manuals, textbooks, and other training materials used to educate FAA controllers will need to be updated to reflect the airspace reclassification. According to the FAA Aeronautical Center in Oklahoma City, lesson plans, visual aids, handouts, laboratory exercises, and tests will need to be revised.

The cost of these revisions is determined by multiplying the total revision time by the hourly cost of the course manager making the changes. The course managers are level GS-14 (step 5) employees with an average loaded annual salary of $72,000. Assuming 2,080 hours per year, their average loaded hourly salary is $35. The cost of the course changes is estimated to be $43,000 (discounted). An additional cost of $10,000 (discounted) will accrue as the result of a one-week seminar and associated travel. This seminar will be necessary to educate course managers about the airspace reclassification. The total cost that will accrue from this factor is estimated to be $43,000 (discounted).

3. Re-education of the Pilot Community

Pilots who are presently certificated to operate in the U.S. airspace will need to become familiar with the airspace reclassification as the result of this rule. This task will be accomplished through a variety of publications, videotapes, and pilot meetings.

The FAA is considering the production of a videotape that will be provided as a public service to industry associations, such as AOPA, ALPA, and NBAA, to inform them of the airspace reclassification. This videotape could be shown at various association meetings to help re-educate the pilot community. The FAA's Office of Public Affairs estimates that the film will be 20 to 25 minutes long and could be produced at a cost of $75,000 (discounted).

The FAA is also considering the publication of an advisory circular (AC) which will document the new airspace classifications. The AC will be mailed to each registered pilot. It is estimated that one man-week at a level GS-14 (Step 5) will be required to draft the AC and obtain approval in the sponsoring organization, and one GS-14 man-week will be required to obtain FAA approval of the AC. The cost associated with 2 man-weeks at a level GS-14 needed to prepare the AC is estimated

This final rule is expected to generate benefits in the form of enhanced safety and operational efficiency to the aviation community. These benefits are briefly described, in qualitative terms, below:

1. Increased Safety Due to Better Understanding and Simplification

The FAA believes that the simplified classification in this rule will reduce airspace complexity and thereby enhance safety. This airspace reclassification mirrors the new ICAO airspace designations, except there will not be a U.S. Class F airspace.

This rule also will increase safety in the U.S. since foreign pilots operating aircraft in U.S. airspace will be familiar with the airspace designations and classification system.

Another simplification which is expected to help increase airspace safety is the change that will correlate the class of controlled airspace currently termed a control zone to the airspace of the surrounding area. Currently, several types of airspace are designated around an airport, which makes it difficult for pilots and controllers to determine how the areas are classified and which requirements apply. After the reclassification, the terminology will be more explanatory.

The conversion of statute mile designations to nautical mile designations is intended to further simplify operations. Since the instruments on-board the aircraft are calibrated in nautical miles and aviation charts have representations in nautical miles, this change will eliminate the need for pilots to convert between nautical and statute miles. This simplification will help pilots and controllers to be better able to understand the airspace designations in Part 71.

2. Reduced Minimum Distance from Cloud Requirement

This airspace reclassification will designate TCAs as Class B airspace areas. The VFR minimum distance from clouds requirement in this airspace will also change. Currently this distance is 500 feet below, 1,000 feet above, and 2,000 feet horizontal. In Class B airspace, the rule will require that the minimum distance from clouds be "clear of clouds." This change will afford VFR traffic increased opportunities to fly in Class B airspace in more types of weather than they currently have in a TCA. Furthermore, there will be reduced requests for deviation from ATC instruction to maintain cloud clearance. This action will not threaten safety since all aircraft operating in Class B airspace are provided with the appropriate separation.

3. Operation Of Ultralight Vehicles

This rule incorporates NAR task group 1–7.2 recommendations and changes Part 103 to correspond to the new airspace designations found in Part 71. There will be no decrease in safety because there is not change in the type of airspace in which ultralights are permitted to fly or operate.

Conclusion

Despite the fact that benefits are *not* quantifiable in monetary terms, the FAA, nonetheless, concludes that the benefits of this rule are expected to outweigh its expected costs.

International Trade Impact Assessment

Since this rule will not affect airspace outside the United States for which the United States is responsible, it is not expected to impose any new operating requirement in that airspace. As such, it will have no affect on the sale of foreign aviation products or services in the United States, nor will it affect the sale of U. S. products or services in foreign countries.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily and disproportionately burdened by government regulations. The RFA requires agencies

FEDERALISM IMPLICATIONS

The amendments in this final rule will not have substantial direct effect on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that these amendments will not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

PAPERWORK REDUCTION ACT

In accordance with the Paperwork Reduction Act of 1980 (Pub L. 96-511), there are no requirements for information collection associated with this rule.

CONCLUSION

For reasons discussed in the preamble, and based on the findings in the Regulatory Evaluation Determination and the International Trade Impact Analysis, the FAA has determined that these amendments do not qualify as a major rule under Executive Order 12291. In addition, the FAA certifies that these amendments will not have a significant economic effect on a substantial number of small business entities under the criteria of the Regulatory Flexibility Act. These amendments are considered significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). A regulatory evaluation of these amendments, including a Regulatory Flexibility Determination and Trade Impact Analysis, has been placed in its entirety in the regulatory docket. A copy may be obtained by contacting the person identified under *"FOR FURTHER INFORMATION CONTACT."*

CROSS REFERENCE

To identify where existing regulations for Part 75 are relocated in existing Part 71, the following cross reference lists are provided:

CROSS REFERENCE TABLE

Old Section	New Section
75.1	71.601
75.11	71.603
75.13	71.605
75.17	Deleted
75.100	71.607
75.400	71.609

New Section	Old Section
71.601	75.1
71.603	75.11
71.605	75.13
71.607	75.100
71.609	75.400

To identify where existing regulations for Part 71 are relocated in the rule to be effective September 16, 1993, or if the regulations will be relocated in FAA Order 7400.9, the following cross reference lists are provided:

71.9	71.71
71.11	Deleted
71.12	71.41
71.13	71.71
71.14	71.51
71.15	71.31
71.17	71.5
71.19	71.7
71.101	Subpart E of FAA Order 7400.9
71.103	Subpart E of FAA Order 7400.9
71.105	Subpart E of FAA Order 7400.9
71.107	Subpart E of FAA Order 7400.9
71.109	Subpart E of FAA Order 7400.9
71.121	71.79
71.123	Subpart E of FAA Order 7400.9
71.125	Subpart E of FAA Order 7400.9
71.127	Subpart E of FAA Order 7400.9
71.151	Subpart E of FAA Order 7400.9
71.161	71.71 and Subpart E of FAA Order 7400.9
71.163	71.71 and Subpart E of FAA Order 7400.9
71.165	Subpart E of FAA Order 7400.9
71.171	Subpart D or E of FAA Order 7400.9
71.181	Subpart E of FAA Order 7400.9
71.193	71.33
71.201	71.901
71.203	Subpart H of FAA Order 7400.9
71.207	Subpart H of FAA Order 7400.9
71.209	Subpart H of FAA Order 7400.9
71.211	Subpart H of FAA Order 7400.9
71.213	Subpart H of FAA Order 7400.9
71.215	Subpart H of FAA Order 7400.9
71.301	Subpart E of FAA Order 7400.9
71.401	Subpart B of FAA Order 7400.9
71.501	Subpart C of FAA Order 7400.9
71.601	Deleted
71.603	Subpart A of FAA Order 7400.9
71.605	Subpart A of FAA Order 7400.9
71.607	Subpart A of FAA Order 7400.9
71.609	Subpart A of FAA Order 7400.9

New Section	**Old Section**
71.1	71.1
71.5	71.17
71.7	71.19
71.9	New
71.31	71.15
71.33	71.193
71.41	71.12
71.51	71.14
71.61	New
71.71	71.9, 71.13, 71.161, 71.163
71.73	71.3
71.75	71.5
71.77	71.6
71.79	71.121
71.901	71.201

Subpart D or Subpart E	71.171
Subpart E	71.101
Subpart E	71.103
Subpart E	71.105
Subpart E	71.107
Subpart E	71.109
Subpart E	71.123
Subpart E	71.125
Subpart E	71.127
Subpart E	71.151
Subpart E	71.161
Subpart E	71.163
Subpart E	71.165
Subpart E	71.181
Subpart E	71.301
Subpart H	71.203
Subpart H	71.207
Subpart H	71.209
Subpart H	71.211
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The Rule

In consideration of the foregoing, the Federal Aviation Administration amends SFAR 51-1, SFAR 60, SFAR 62, Parts 1, 11, 45, 61, 65, 71, 75, 91, 93, 101, 103, 105, 121, 127, 135, 137, 139, and 171 of Federal Aviation Regulations (14 CFR Parts 1, 11, 45, 61, 65, 71, 75, 91, 93, 101, 103, 105, 121, 127, 135, 137, 139, and 171).

The authority citation for Part 101 is revised to read as follows:

Authority: 49 U.S.C. App. 1348, 1354, 1372, 1421, 1442, 1443, 1472, 1510, and 1522.

Source: Docket No. 1580 (28 FR 6720, 6/29/63) effective 9/30/63, for each subpart unless otherwise noted.

§ 101.1 Applicability.

(a) This part prescribes rules governing the operation in the United States, of the following:

(1) Except as provided for in § 101.7, any balloon that is moored to the surface of the earth or an object thereon and that has a diameter of more than 6 feet or a gas capacity of more than 115 cubic feet.

(2) Except as provided for in § 101.7, any kite that weighs more than 5 pounds and is intended to be flown at the end of a rope or cable.

(3) Any unmanned rocket except:

(i) Aerial firework displays; and,

(ii) Model rockets:

(*a*) Using not more than four ounces of propellant;

(*b*) Using a slow-burning propellant;

(*c*) Made of paper, wood, or breakable plastic, containing no substantial metal parts and weighing not more than 16 ounces, including the propellant; and

(*d*) Operated in a manner that does not create a hazard to persons, property, or other aircraft.

(4) Except as provided for in § 101.7, any unmanned free balloon that—

(i) Carries a payload package that weighs more than four pounds and has a weight/size ratio of more than three ounces per square inch on any surface of the package, determined by dividing the total weight in ounces of the payload package by the area in square inches of its smallest surface;

(ii) Carries a payload package that weighs more than six pounds;

(iii) Carries a payload, of two or more packages, that weighs more than 12 pounds; or

(iv) Uses a rope or other device for suspension of the payload that requires an impact force of more than 50 pounds to separate the suspended payload from the balloon.

(b) For the purposes of this part, a *gyroglider* attached to a vehicle on the surface of the earth is considered to be a kite.

(Amdt. 101-1, Eff. 4/3/64); (Amdt. 101-3, Eff. 5/26/70)

§ 101.3 Waivers.

No person may conduct operations that require a deviation from this part except under a certificate of waiver issued by the Administrator.

§ 101.5 Operations in prohibited or restricted areas.

No person may operate a moored balloon, kite, unmanned rocket, or unmanned free balloon in a prohibited or restricted area unless he has permission from the using or controlling agency, as appropriate.

(Amdt. 101–1, Eff. 4/3/64)

§ 101.7 Hazardous operations.

(a) No person may operate any moored balloon, kite, unmanned rocket, or unmanned free balloon in a manner that creates a hazard to other persons, or their property.

(b) No person operating any moored balloon, kite, unmanned rocket, or unmanned free balloon may allow an object to be dropped therefrom, if such action creates a hazard to other persons or their property.

(Amdt. 101-3, Eff. 5/26/70); (Amdt. 101-4, Eff. 8/20/74)

balloons and kites. However, a person operating a moored balloon or kite within a restricted area must comply only with § 101.19 and with additional limitations imposed by the using or controlling agency, as appropriate.

§ 101.13 Operating limitations.

(a) Except as provided in paragraph (b) of this section, no person may operate a moored balloon or kite—

(1) Less than 500 feet from the base of any cloud;

(2) More than 500 feet above the surface of the earth;

(3) From an area where the ground visibility is less than three miles; or

(4) Within five miles of the boundary of any airport.

(b) Paragraph (a) of this section does not apply to the operation of a balloon or kite below the top of any structure and within 250 feet of it, if that shielded operation does not obscure any lighting on the structure.

§ 101.15 Notice requirements.

No person may operate an unshielded moored balloon or kite more than 150 feet above the surface of the earth unless, at least 24 hours before beginning the operation, he gives the following information to the FAA ATC facility that is nearest to the place of intended operation:

(b) The size of the balloon or the size and weight of the kite.

(c) The location of the operation.

(d) The height above the surface of the earth at which the balloon or kite is to be operated.

(e) The date, time, and duration of the operation.

§ 101.17 Lighting and marking requirements.

(a) No person may operate a moored balloon or kite, between sunset and sunrise unless the balloon or kite, and its mooring lines, are lighted so as to give a visual warning equal to that required for obstructions to air navigation in the FAA publication "Obstruction Marking and Lighting".

(b) No person may operate a moored balloon or kite between sunrise and sunset unless its mooring lines have colored pennants or streamers attached at not more than 50 foot intervals beginning at 150 feet above the surface of the earth and visible for at least one mile.

(Amdt. 101-4, Eff. 8/20/74)

§ 101.19 Rapid deflation device.

No person may operate a moored balloon unless it has a device that will automatically and rapidly deflate the balloon if it escapes from its moorings. If the device does not function properly, the operator shall immediately notify the nearest ATC facility of the location and time of the escape and the estimated flight path of the balloon.

unmanned rocket within a restricted area must comply only with § 101.23(g) and with additional limitations imposed by the using or controlling agency, as appropriate.

§ 101.23 Operating limitations.

No person may operate an unmanned rocket—

(a) In a manner that creates a collision hazard with other aircraft;

(b) In controlled airspace;

(c) Within five miles of the boundary of any airport;

(d) At any altitude where clouds or obscuring phenomena of more than five-tenths coverage prevails;

(e) At any altitude where the horizontal visibility is less than five miles;

(f) Into any cloud;

(Amdt. 101-4, Eff. 8/20/74)

§ 101.25 Notice requirements.

No person may operate an unmanned rocket unless, within 24 to 48 hours before beginning the operation, he gives the following information to the FAA ATC facility that is nearest to the place of intended operation:

(a) The names and addresses of the operators.

(b) The number of rockets to be operated.

(c) The size and weight of each rocket.

(d) The maximum altitude to which each rocket will be operated.

(e) The location of the operation.

(f) The date, time, and duration of the operation.

(g) Any other pertinent information requested by the ATC facility.

§ 101.31 Applicability.

This subpart applies to the operation of unmanned free balloons. However, a person operating an unmanned free balloon within a restricted area must comply only with § 101.33 (d) and (e) and with any additional limitations that are imposed by the using or controlling agency, as appropriate.

§ 101.33 Operating limitations.

No person may operate an unmanned free balloon—

(a) [Unless otherwise authorized by ATC, below 2,000 feet above the surface within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport;]

(b) At any altitude where there are clouds or obscuring phenomena of more than five-tenths coverage;

(c) At any altitude below 60,000 feet standard pressure altitude where the horizontal visibility is less than five miles;

(d) During the first 1,000 feet of ascent, over a congested area of a city, town, or settlement or an open-air assembly of persons not associated with the operation; or

(e) In such a manner that impact of the balloon, or part thereof including its payload, with the surface creates a hazard to persons or property not associated with the operation.

[(Amdt. 101-5, Eff. 9/16/93)]

§ 101.35 Equipment and marking requirements.

(a) No person may operate an unmanned free balloon unless—

(1) It is equipped with at least two payload cut-down systems or devices that operate independently of each other;

(2) At least two methods, systems, devices, or combinations thereof, that function independ-
present an echo to surface radar operating in the 200 MHz to 2700 MHz frequency range.

The operator shall activate the appropriate devices required by paragraphs (a) (1) and (2) of this section when weather conditions are less than those prescribed for operation under this subpart, or if a malfunction or any other reason makes the further operation hazardous to other air traffic or to persons and property on the surface.

(b) No person may operate an unmanned free balloon below 60,000 feet standard pressure altitude between sunset and sunrise (as corrected to the altitude of operation) unless the balloon and its attachments and payload, whether or not they become separated during the operation, are equipped with lights that are visible for at least 5 miles and have a flash frequency of at least 40, and not more than 100, cycles per minute.

(c) No person may operate an unmanned free balloon that is equipped with a trailing antenna that requires an impact force of more than 50 pounds to break it at any point, unless the antenna has colored pennants or streamers that are attached at not more than 50 foot intervals and that are visible for at least one mile.

(d) No person may operate between sunrise and sunset an unmanned free balloon that is equipped with a suspension device (other than a highly conspicuously colored open parachute) more than 50 feet along, unless the suspension device is colored in alternate bands of high conspicuity colors or has colored pennants or streamers attached which are visible for at least one mile.

(Amdt. 101-2, Eff. 4/28/67); (Amdt. 101-4, Eff. 8/20/74)

§ 101.37 Notice requirements.

(a) *Prelaunch notice:* Except as provided in paragraph (b) of this section, no person may operate an unmanned free balloon unless, within 6 to 24 hours before beginning the operation, he gives the

(5) The forecast trajectory and estimated time to cruising altitude or 60,000 feet standard pressure altitude, whichever is lower.

(6) The length and diameter of the balloon, length of the suspension device, weight of the payload, and length of the trailing antenna.

(7) The duration of flight.

(8) The forecast time and location of impact with the surface of the earth.

(b) For solar or cosmic disturbance investigations involving a critical time element, the information in paragraph (a) of this section shall be given within 30 minutes to 24 hours before beginning the operation.

(c) *Cancellation notice:* If the operation is canceled, the person who intended to conduct the operation shall immediately notify the nearest FAA ATC facility.

(d) *Launch notice:* Each person operating an unmanned free balloon shall notify the nearest FAA or military ATC facility of the launch time immediately after the balloon is launched.

(b) One hour before beginning descent, each person operating an unmanned free balloon shall forward to the nearest FAA ATC facility the following information regarding the balloon:

(1) The current geographical position.

(2) The altitude.

(3) The forecast time of penetration of 60,000 feet standard pressure altitude (if applicable).

(4) The forecast trajectory for the balance of the flight.

(5) The forecast time and location of impact with the surface of the earth.

(c) If a balloon position report is not recorded for any two-hour period of flight, the person operating an unmanned free balloon shall immediately notify the nearest FAA ATC facility. The notice shall include the last recorded position and any revision of the forecast trajectory. The nearest FAA ATC facility shall be notified immediately when tracking of the balloon is re-established.

(d) Each person operating an unmanned free balloon shall notify the nearest FAA ATC facility when the operation is ended.

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